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REPUBLIC OF SOUTH AFRICA

DEPARTEMENT VAN  
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03/00085

05 2003

Certificate

PATENT OFFICE

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- 1) South African Patent Application No. 2002/5092 accompanied by a Provisional Specification was filed at the South African Patent Office on 25 June 2002 in the name of **Blenheim Investments Limited** in respect of an invention entitled: "Method of producing organic sheet material"
- 2) The Photocopy attached hereto is a true copy of the provisional specification and drawings filed with South African Patent Application No. 2002/5092.

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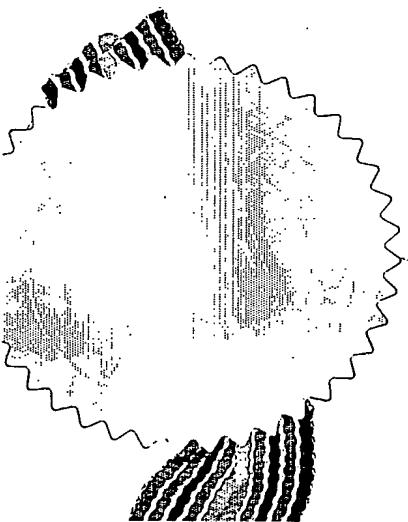
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dag van  
day of  
July 2003

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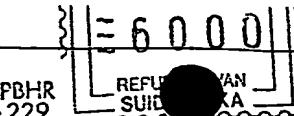


REPUBLIC OF SOUTH AFRICA

PATENTS ACT, 1978

## REGISTER OF PATENTS

OFFICIAL APPLICATION NO.		LODGING DATE : PROVISIONAL		ACCEPTANCE DATE	
21	01	22	25 June 2002	43	
INTERNATIONAL CLASSIFICATION		LODGING DATE : COMPLETE		GRANTED DATE	
51		23			
FULL NAME(S) OF APPLICANT(S) / PATENTEE(S)					
71	BLENHEIM INVESTMENTS LIMITED				
APPLICANTS SUBSTITUTED : <span style="float: right;">DATE REGISTERED</span>					
71					
ASSIGNEE(S) <span style="float: right;">DATE REGISTERED</span>					
71					
FULL NAME(S) OF INVENTOR(S)					
72	BEUKES, Vivian Godfrey				
PRIORITY CLAIMED		COUNTRY		NUMBER	
N.B. Use international abbreviation for country. (See Schedule 4)		33		31	
32					
TITLE OF INVENTION					
54	METHOD OF PRODUCING ORGANIC SHEET MATERIAL				
ADDRESS OF APPLICANT(S) / PATENTEE(S)					
Suite 1, Phoenix House Davis Place St Helier, Jersey JE2 4TE Channel Islands					
ADDRESS FOR SERVICE					REF
74	D M Kisch Inc, 66 Wierda Road East, Wierda Valley, SANDTON			P24651ZA00	
PATENT OF ADDITION NO.		DATE OF ANY CHANGE			
61					
FRESH APPLICATION BASED ON		DATE OF ANY CHANGE			

APPLICATION FOR A PATENT AND ACKNOWLEDGEMENT OF RECEIPT  
(Section 30 (1) - Regulation 22)

The grant of a patent is hereby requested by the undermentioned applicant on the basis of the present application filed in duplicate.

OFFICIAL APPLICATION NO	
21	01
<b>2002/5092</b>	
FULL NAME(S) OF APPLICANT(S)	
71	BLENHEIM INVESTMENTS LIMITED

DMK REFERENCE
P24651ZA00

ADDRESS(ES) OF APPLICANT(S)	
	Suite 1, Phoenix House Davis Place St Helier, Jersey JE2 4TE Channel Islands

TITLE OF INVENTION				
54	METHOD OF PRODUCING ORGANIC SHEET MATERIAL			
	THE APPLICANT CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANYING FORM P2 The earliest priority claimed is			
	THIS APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO.	21	01	
	THIS APPLICATION IS FRESH APPLICATION IN TERMS OF SECTION 37 AND BASED ON APPLICATION NO.	21	01	

THIS APPLICATION IS ACCOMPANIED BY :				
x	1a	A single copy of a provisional specification of 9 pages.		
	1b	Two copies of a complete specification of pages.		
	2a	Informal drawings of sheets.		
x	2b	Formal drawings of 1 sheets.		
	3	Publication particulars and abstract (form P8 in duplicate).		
	4	A copy of figure of the drawings for the abstract.		
	5	Assignment of invention (from the inventors) or other evidence of title.		
	6	Certified priority document(s).		
	7	Translation of priority document(s).		
	8	Assignment of priority rights.		
	9	A copy of form P2 and a specification of S.A. Patent Application.		
	10	A declaration and power of attorney on form P3.	21	01
	11	Request for ante-dating on form P4.		
	12	Request for classification on form P9.		
	13a	Request for delay of acceptance on form P4.		
	13b			

DATED

25 June 2002

ADDRESS FOR SERVICE	
74	D M Kisch Inc 66 Wierda Road East Wierda Valley SANDTON

The duplicate will be returned to the applicant's address for service as proof of lodging but is not valid unless endorsed with official stamp.

Patent Attorney for Applicant(s) DESIGNS, TRADE MARKS AND COPYRIGHT	
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REGISTRAR OF PATENTSITE, MODELLE, HANDELSMERKE EN OUTEURSREG	

## REPUBLIC OF SOUTH AFRICA

## PATENTS ACT, 1978

PROVISIONAL SPECIFICATION  
( Section 30 (1) - Regulation 27 )

OFFICIAL APPLICATION NO.			LODGING DATE	DMK REFERENCE
21	01	2002/5092	25 June 2002	P24651ZA00
FULL NAME(S) OF APPLICANT(S)				
71	BLENHEIM INVESTMENTS LIMITED			
FULL NAME(S) OF INVENTOR(S)				
72	BEUKES, Vivian Godfrey			
TITLE OF INVENTION				
54	METHOD OF PRODUCING ORGANIC SHEET MATERIAL			

## Introduction

The invention relates to a method of producing an organic material, wherein the material multiplies through a process of germination, for increasing growth and harvest of the material. The invention also extends to the use of this 5 material in a number of applications.

## Background to the invention

Communalities of yeasts and bacteria have been known and applied for years inter alia in the preparation of fermented drinks and foodstuffs. One example 10 of this symbiosis of bacteria and yeasts is the tea-fungus "Kombucha", which has been used since as early as 1914 to cure ailments and illnesses such as stomach-intestine activity, haemorrhoids, joint rheumatism, constipation, arteriosclerosis, headaches, dizziness, high blood pressure, anxiety, dizziness and many other symptoms. The fungus generally comprises of a mushroom-15 type material that grows on a suitable nutrient medium and that is harvested for use after a period of time.

However, the applicant has developed a method of increasing growth and harvest of fungus material of this nature and has surprisingly found various 20 other applications for this material.

## Object of the invention

It is accordingly and object of the present invention to provide a method of producing an organic material for increasing growth and harvest of the organic 25 material.

Summary of the invention

A method of producing an organic material wherein the material multiplies through a process of germination and wherein the method is characterised therein that it includes a two-stage fermentation process, the method

5 comprising the steps of preparing a nutrient medium in which an organic bacterial fungus will grow; adding a starter culture of the organic bacterial fungus to the nutrient medium; permitting the mixture of nutrient medium and fungus culture to undergo a first stage fermentation process; transferring the mixture to a fermentation container; and allowing the mixture to undergo a

10 second stage fermentation process until the material has germinated fully.

The material may be a gelatinoid material in the form of a substantially flat sheet. The sheet material may be characterised therein that it first spreads over the surface of the nutrient medium and then thickens once the surface of

15 the nutrient medium is covered. Once the material has thickened into the flat sheet, it is capable of being removed from the nutrient medium.

The nutrient medium may be an infusion of plant material and water. Particularly, the nutrient medium may be an infusion of tealeaves and water.

20 More particularly, the tealeaves may be selected from a group including, although not necessarily limited to, Cyclopia Intermedia, Matricaria Recutita, Aspalathus linearis and/or Lavender.

The organic bacterial fungus may be a fungus colony of the specific plant material to be infused during preparation of the nutrient medium. So, for

example, if the nutrient medium is prepared from an infusion of Cyclophia Intermedia leaves in water, the fungus starter culture will be a fungus colony of Cyclophia Intermedia.

- 5 The first stage fermentation process may be for a period of between 3 and 5 weeks. More particularly, the first stage fermentation process optimally may be for a period of 4 weeks and may be characterised therein that the mixture is not disturbed at all (e.g. touched, stirred, shaken, moved or otherwise displaced) during the first stage fermentation process.

10

During the first stage fermentation process the nutrient medium may be maintained at a temperature ranging between 20°C and 30°C. Optimally, the nutrient medium is maintained at a temperature range of 23°C - 27°C.

- 15 The first stage fermentation process should be executed in the absence of any direct sunlight.

- 20 The second stage fermentation process may be for another period of between 3 and 5 weeks. More particularly, the second stage fermentation process may be for another period of 4 weeks or until the sheet material has grown to a thickness of between 8mm and 10mm.

- 25 During the second stage fermentation process the nutrient medium is again maintained at a temperature range of between 20°C and 30°C, and optimally at a temperature range of 23°C - 27°C.

The nutrient medium may have a pH of between 2.5 and 3.5 before removal of the sheet material. More preferably, the nutrient medium may have a pH of 2.7 – 3.2.

- 5 The fermentation container may be an elongate and substantially cylindrical container. For the purpose of this document, "cylindrical" will be interpreted to include a container having a circular, oval, ecliptic, square, triangular, rectangular, hexagonal or the like cross-section. The mixture may be introduced into the fermentation container such that the surface area of the
- 10 nutrient medium is below the horizontal centerline of the cylindrical fermentation container. More particularly, the surface area of the nutrient medium may be 8mm - 10mm below the horizontal centerline of the cylindrical fermentation container, the arrangement being such that the sheet material is permitted to germinate until it has reached the horizontal centerline of the
- 15 fermentation container, after which it is removed, at which point the sheet material has a thickness of 8mm - 10mm.

In one form of the invention the fermentation container may be a fermentation pipe having a diameter in the order of 100mm. The fermentation pipe may 20 vary in length, but the applicant has found that a pipe length in the order of 6m provides for good airflow and temperature control of the nutrient medium.

The material may be dried to form a dry sheet or beaten to form a gel. The material may be characterised therein that it is non-toxic and biodegradable.

- 25 The material further may be characterised therein that it is substantially self-

adherent to most surfaces and as such can be sprayed onto surfaces when it is in the gel form.

The material may also be characterised therein that it comprises fire retardant  
5 and heat transmission properties.

The invention extends to the use of the material produced according to the invention as a fire extinguishing material for use, for example in commercial fire extinguishers, sprinkler systems for buildings, ships, trains or the like, in  
10 heat protective clothing, for use in extinguishing forest fires or vegetation fires,

The invention also extends to the use of the material produced according to the invention as a fire prevention material, for example as a lining material in buildings, aircraft, ships or the like, in paints, varnishes or the like to be  
15 applied to buildings, aircraft, ships or the like, in the manufacturing of roof tiles, dry walling, partitions, ceiling boards, cement formulations, on aircraft runway surfaces to decrease fire risks during emergency landings, inclusion in furniture upholstery, and the like.

20 The applicants have found that the material floats upon flammable liquid solvent such as petrol. Accordingly, the invention extends to the use of the material according to the invention for extinguishing solvent fires, such as petrol fires by spraying the material onto the fire.

The invention also extends to the use of the material according to the invention for emulsifying oil and water by introducing the material into the oil and/or water. More particularly, the invention extends to the use of the material in emulsifying oil and water during a process of recovering oil from a 5 source, such as during oil winning from an oil well.

The invention further extends to the use of the material according to the invention for terminating smoke emission during a fire by spraying the material over the smoke, the material being characterised therein that it adheres to the 10 smoke particles, increasing its particle weight and as such forcing it the ground.

#### Specific embodiment of the invention

Without limiting the scope thereof, the invention will now be further illustrated 15 and exemplified with reference to the accompanying examples and the drawing, which is a transverse cross-sectional view through a fermentation pipe used by the applicants in the method according to the invention.

#### Example 1

20 A nutrient medium was prepared by adding 2 teaspoons of dried tealeaves, herbal mixture to 1 litre of boiling water. The infusion was allowed to stand for approximately 15 minutes, after which the tealeaves were strained off. Subsequently, 70 – 100 grams of refined white sugar was added to the infusion while stirring the same to facilitate solution of the sugar. The liquid 25 was allowed to cool down to between 20°C and 25°C, after which 10% fungus

colony was added to the same. If the temperature is too high the fungus colony will die.

The liquid was transferred to a container for the first stage fermentation stage  
5 and left for 4 weeks. During the first stage fermentation stage the liquid was maintained nutrient medium was maintained at 23<sup>0</sup>C – 27<sup>0</sup>C.

After 4 weeks, the liquid was removed to elongate plastic fermentation pipes  
10 (2) for the second stage fermentation stage. The pipes (2) were filled so that the surface area of the nutrient medium (4) was 8mm – 10mm below the horizontal centerline (6) of the pipes (2), as illustrated in the accompanying drawing. The pipes (2) were arranged in conditions with good airflow, humidity and in semi-light conditions. The second stage fermentation stage was allowed to continue for 4 weeks.

15

After 4 weeks the sheet material (8) had grown to a thickness of 8mm. The nutrient medium (4) was drained off and the sheet material (8) was stored in airtight containers.

20 Example 2

Sheet material formed according Example 1 was beaten to form a gel, after which 1 part of the gel was mixed with 2 parts water. Five airplane tires were set alight. The mixture was sprayed onto the tires and the fires were extinguished in approximately 6 – 8 seconds. There was no subsequent  
25 smoke or re-ignition.

Example 3

A car seat was placed on a runway and two dolls were placed side-by-side on the seat. The one doll and the seat were pre-sprayed with a gel-form of the material, while the other doll was not treated at all. Thereafter, the seat and

5 both dolls were drenched in petrol and set alight. After the fire had burnt out, the seat and the doll which had been treated were in perfect condition (not even the lace on the doll's dress had been scorched!), while the other doll was almost incinerated.

10 It will be appreciated that many other embodiments of the invention may be possible without departing from the spirit or scope of the invention as set out in the consistory clauses.

Dated this 25<sup>th</sup> day of June 2002

Patent Attorney  Agent for the Applicant

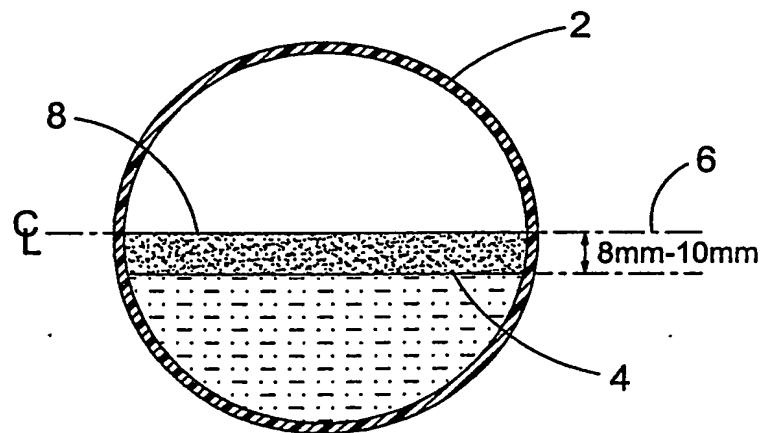


FIGURE 1

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